Revised September 8, 2009

Joint Meeting of the Department of Energy (DOE)
Atmospheric Radiation Measurement Program Climate Research Facility (ACRF)
Cloud Modeling and Aerosol Working Groups and Atmospheric Science Program (CMWG/AWG/ASP)

Millennium Harvest House Hotel
Boulder, Colorado
29 September - 2 October 2009

AGENDA
(blue=CMWG plenary, green=Joint plenary, red=AWG plenary, yellow=parallel ISDAC discussion)

Tuesday, September 29	
7:00 - 8:00	**Registration**
8:00 - 10:15	**CMWG plenary—Welcome to new CMWG PIs**
	Ann Fridlind *Introductions and overview*
	Brian Mapes *Parameterizing organized convection + Global cloudiness peak near -15C: what's going on?*
	Wei-Kuo Tao *The impact of large-scale forcing and vertical resolution on cloud and precipitation processes*
	Ping Zhu *High resolution simulation and comparison of shallow cumulus clouds observed during the TWP-ICE, Azores, and RICO experiments*
	Invited speakers
	Larry Berg *Representation of shallow cumuli in regional scale models*
	Hugh Morrison *Impact of parameterized microphysics on the simulation of organized deep convection*
	Dave Randall *The evolution of complexity in GCMs*
10:15 - 10:45	**Coffee break**
10:45 - 12:15	**CMWG plenary**
	Chen Fei *Roles of land surface in the modeled diurnal cycle*
	Yunyan Zhang *Mechanisms affecting the transition from shallow to deep convection over land: Inferences from observations collected at the ARM Southern Great Plains site*
	Zhiming Kuang *Nature versus nurture in shallow convection*
	Erin Wagner *Identifying boundary layer turbulence structure using water vapor mixing ratios retrieved from the SGP raman lidar*
	Mark Miller *On the performance of the IPCC and NCAR climate models in West Africa*
	Catherine Rio *The 10th of July 2006 over Niamey: A golden case of daytime moist convection in a semi-arid environment*
12:15 - 1:30	**Lunch break**

1:30 - 3:15	**CMWG plenary—Tropical Warm Pool–International Cloud Experiment (TWP-ICE) / GEWEX Cloud System Study (GCSS) Program Case Study**
	Jon Petch *GCSS Precipitating Cloud Systems Working Group Report*
	Minghua Zhang *Analyzing the large-scale atmospheric momentum budget for TWP-ICE*
	Shaocheng Xie *Observed large-scale structures and diabatic heating and drying profiles during TWP-ICE*
	Adam Varble *Using radar data to evaluate CRM simulations of TWP-ICE monsoonal convection*
	Adrian Hill *Cloud resolving model (CRM) forcing ensemble of ARM/GCSS/SPARC TWP-ICE case - results from the UK Met Office LEM*
	Guang Zhang *Microphysics in convection parameterization: comparison with TWP-ICE data*
	Hugh Morrison *Simulation of TWP-ICE deep convection using a new bulk microphysics scheme*
3:15 - 3:45	**Coffee break**
3:45 - 5:30	**CMWG plenary**
	Steve Krueger *Vertical velocity statistics in cloud-resolving simulations of deep convection*
	Segele Zewdu *Effects of assimilating surface and upper air sounding data in WRF microphysics simulations of warm-season convection in the vicinity of the SGP Central Facility*
	Xiaoqing Wu *Effects of assimilating surface and upper air sounding data in WRF microphysics simulations of warm-season convection in the vicinity of the SGP Central Facility*
	Esther White *A modeling study of freezing precipitation events in the Southern Great Plains region*
	Jiwen Fan *Dominant effect of CCN over IN on tropical anvil characteristics and water vapor of the tropical tropopause layer*
	Jun-Ichi Yano *Revisit of Riehl and Malkus (1958): observational and model diagnoses, prognostic modellings*
	Zachary Eitzen *Variations in ERA Interim and CERES-Terra fluxes and cloud properties with SST anomalies for low cloud regions*
	TWP-ICE/GCSS breakout
	Laura Davies *Initial results for ensemble SCM intercomparison of TWP-ICE*
	Yanluan Lin *TWP-ICE NWP intercomparison: Status and update*
	Ping Zhu *A limited area mode (LAM) intercomparison study of the TWP-ICE case*
	Ann Fridlind *TWP-ICE CRM intercomparison: First results from five models*

Wednesday, September 30	
7:00 – 8:00	**Registration**
8:00 – 10:00	**AWG plenary**
	Working Group Welcome
	Aerosol Instrumentation and Measurements Overview **Anne Jefferson** *Aerosol Observing System* **Stephen Springston** *ASP archive and new instrumentation* **Don Collins** *TDMA/CCN* **Manvendra Dubey** *Photoacoustic spectrometer* **Gary Hodges** *MFRSR aerosol optical depth* **Rob Newsome** *Raman lidar, HSRL, Doppler lidar* **Connor Flynn** *Aerosol Best Estimate*
	Discussion: *data product development and VAPs*
8:30 - 10:00	**CMWG plenary—Data products and discussion**
	Ric Cederwall *Surface Heat Flux Study Group report*
	Steve Klein *Vertical Velocity Focus Group report*
	Doug Spangenberg *Update on NASA-Langley satellite cloud and radiation products for the ARM community*
	Shaocheng Xie *Climate Modeling Best Estimate VAP report*
	Aaron Kennedy *Relationships of observed cloud fractions to ARM continuous forcing and NARR at the ARM SGP*
	General discussion on any issue of importance to the CMWG (open microphone)
10:00 - 10:30	**Coffee break**
10:30 - 12:15	**Joint plenary**
	An Introduction to the Atmospheric System Research (ASR) program and panel discussion
	Kiran Alapaty *ARM Program Manager* **Wanda Ferrell** *ACRF Program Manager* **Ashley Williamson** *ASP Program Manager*
	Joint plenary: Aerosol and Cloud Modeling
	Steve Schwartz *Aerosol forcings: why it is essential that they be determined, and some ideas on how*
	Yangang Liu *Continuous evaluation of fast processes in Climate Models Using ARM Measurements*

	Zhanqing Li *A direct and strong evidence of aerosol invigoration effect from the ARM long-term observation*
	Cathy Chuang *Impacts of autoconversion scheme on simulated cloud properties and aerosol indirect effects*
12:15 - 1:30	**Lunch break**
1:30 - 3:30	**Invited speakers—Modeling aerosol-cloud interactions**
	Surabi Menon *GISS Model E*
	Steve Ghan *Community Climate System Model*
	Jon Petch *Clouds in the Met Office models*
	Tom Ackerman *An Analysis of Cloud Cover in the Multiscale Modeling Framework Global Climate Model using 4 and 1 km horizontal grids*
	Paul Field *Microphysics and aerosols in cloud scale models*
	Graham Feingold *LES/small-scale modeling*
3:30 - 3:50	**Coffee break**
3:50 – 5:30	**ARM aerosol and cloud data priorities panel discussion** ***Presentation of new ACRF Instrumentation; Discussion of priorities for data product development***
	Jim Mather *ACRF Technical Director* **Randy Peppler** *ACRF Data Quality Office* **Matt Shupe** *Cloud Properties Working Group Chair*
6:00	**POSTER SESSION** ***Buffet dinner starting at 6:00 with posters available for discussion thereafter***

Thursday, October 1	
7:30 - 8:30	**Registration**
8:30 - 10:15	**Joint plenary—Indirect and Semi-Direct Aerosol Campaign (ISDAC)**
	Greg McFarquhar *Understanding cloud measurements from ISDAC*
	Paul Lawson *Cloud microphysical observations during ISDAC*
	Sara Lance *Cloud microphysical data from the NOAA aircraft*
	David Mitchell *Comparing ISDAC and M-PACE particle size distribution measurements*
	Alla Zelenyuk *Characterizing the size and composition of cloud condensation nuclei (CCN) and ice cloud nuclei (IN) over the North Pole of Alaska*
	Sara Brooks *Heterogeneity of ice nuclei in the Arctic*
	M. Dubey *Airborne photoacoustic observations of aerosol optical properties aloft Alaska connected to chemical composition measurements during ISDAC*
10:15 - 10:45	**Coffee break**
10:45 - 12:15	**Joint plenary—ISDAC**
	Peter Liu *Droplet closure studies using ISDAC data*
	Mikhail Ovtchinnikov *On modeling ice-liquid partitioning in mixed phase Arctic stratus: effects of cloud dynamics and microphysics representation*
	Jiwen Fan *ISDAC case studies—model simulations and observation*
	Amy Solomon *The radiative and dynamical impact of aerosols on mixed-phase clouds observed during ISDAC and M-PACE*
	Alex Avramov I*ce formation closure during ISDAC: Flight 31 as a first modeling case study*
	Ismail Gultepe *Surface Observations During ISDAC: Light Precipitation and Ice fog Occurrence*
12:15 - 1:30	**Lunch break**
1:30 - 3:15	**Joint plenary—ISDAC**
	Xiaohong Liu *Effects of mixed-phase cloud ice nucleation parameterizations on clouds, radiation and climate*
	N. Shantz *Aerosol effects on ice, liquid, and mixed phase clouds during ISDAC flights*
	Ismael Gultepe *Microphysical parameterizations based on ISDAC aircraft observations and aerosol-cloud effects on radiative fluxes*
	Rich Ferrare *High Spectral Resolution Lidar (HSRL) aerosol/cloud measurements during the ARCTAS/ISDAC campaigns*
	Hugh Morrison *Preliminary results from the WMO/GCSS SHEBA model intercomparison*
	Bastiaan van Diedenhoven *Simulating lidar depolarization by aerosols and clouds: Lessons from the SHEBA campaign*
3:15 - 3:45	**Coffee break**

3:45 - 5:30	**ISDAC open discussion**
3:45 - 5:30	**AWG plenary**
	Allison McComiskey *ASR Science Plan Overview*
	Jerome Fast *Applying the Aerosol Modeling Testbed to Assess the Performance of Simulated Particulate Properties and Radiative Forcing from Different Process Modules*

	Discussion:
	Science Questions
	• what questions does the aerosol group what to answer in the next 5-10 years?
	  ○ lifecycle
	  ○ radiative forcing
	  ○ aerosol-cloud interactions
	• what steps do the aerosol group want to take to integrate observations and analysis with modeling?
	• is there a call for specific focus groups?

Friday, October 2	
8:00-10:00	**AWG plenary**
	Campaigns – Past, Current, and Planned **John Ogren** *RACORO* **Rich Ferrare** *RACORO HSRL* **Gannet Hallar** *StormVeX* **Rahul Zaveri** *CARES*
	Discussion: IOP/Campaign science Future campaign proposals
10:00-10:15	**Coffee break**
10:15-12:30	**AWG plenary**
	Anne Jefferson *Empirical CCN prediction*
	Brad Flowers *Long-range transport of aerosols at Cheju with 3-laser PAS*
	Jian Wang *Aerosol effect on cloud microphysics at VOCALS*
	Zhangqing Li *Aerosol impact on cloud height and rainfall frequency at SGP*
	Tony Prenni *Ice nuclei and large aerosol particles*
	Seoung Soo Lee *Thunderstorms and stratocumulus: How does their contrasting morphology affect their interactions with aerosols?*
12:30	Adjourn